

## **OPTIMIZATION OF EXCITATION WAVEFORM FOR NONLINEAR TRANSMIT-RECEIVE SYSTEMS**

### **ABSTRACT OF THE DISCLOSURE**

A process for optimizing the excitation waveform that is delivered to a transmitter that, together with a receiver, form part of a nonlinear transmission and reception system. The process may include delivering a transmission test signal to the transmitter, generating a receive test signal from the receiver that is a nonlinear function of the transmission test signal, developing a nonlinear model of the nonlinear function, and determining an optimum excitation signal based on the model. An application to ultrasonic imaging for breast mammography is also disclosed.